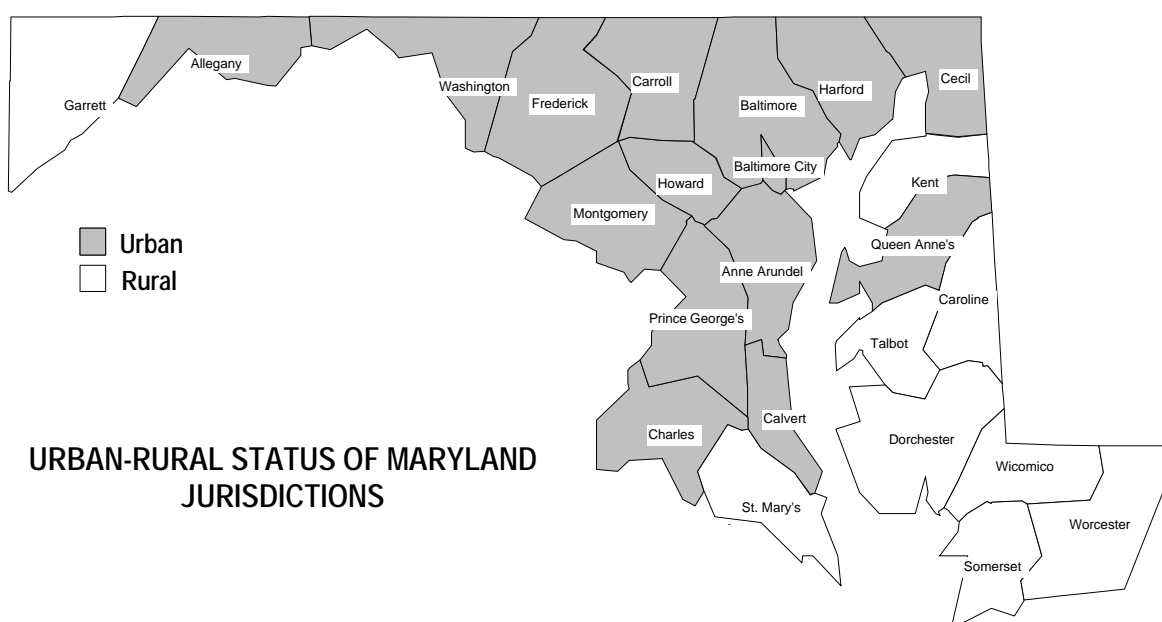


## 2. URBAN-RURAL VARIATIONS IN PRACTITIONER SERVICES UTILIZATION AND EXPENDITURES

Differences in practitioner utilization between urban and rural areas reflect several factors. Rural residents as a group have different demographic characteristics than urban residents. Nationally, rural residents tend to be older and poorer than their urban counterparts, and have a higher incidence of chronic disease.<sup>3</sup> Maryland's rural residents are similarly older and poorer than the state's urban population (see Appendix, Table 1). Additionally, practitioner supply varies between urban and rural areas. Rural areas tend to have a lower physician-to-population ratio than do urban areas (see Appendix, Table 2). The interaction between the two factors that characterize rural areas, a potentially poorer health status among residents and a lower practitioner supply, can lead to different patterns of practitioner use in urban and rural parts of the state.



The map above indicates the assignment of jurisdictions in Maryland to rural and urban classifications. Of the 24 jurisdictions, only nine are designated as rural and these contain just 7.3 percent of the state's population. Rural areas in Maryland are somewhat atypical of rural areas nationally. Specifically, most rural Maryland residents do not reside in isolated communities. In fact, virtually every part of Maryland is within a half-day's access of a major medical center, either within Maryland or in one of its neighboring states. Thus, access to sophisticated, but seldom-needed, tertiary care services is generally not an issue for any of the state's residents. Whatever problems rural residents have obtaining care are more likely to involve access to high quality routine diagnostic and preventive services, similar to low-income urban residents who are in poor health.

The county-based urban-rural comparison presented here may not fully illustrate the extent of the differences between the state's urban and rural populations because within some of the counties

<sup>3</sup> Weisgrau, Sheldon. "Issues in Rural Health: Access, Hospitals, and Reform." *Health Care Financing Review*. Fall, 1995, Volume 17, Number 1, p.1.

classified as rural more densely populated pockets exist which resemble urban areas. This inclusion of “urban-like” areas in the rural category dilutes, to some degree, the true magnitude of urban-rural differences that may be found in the state. Additionally, results for urban category are heavily weighted by Baltimore City, which often drives the averages. Future analyses might benefit from a more detailed categorization of urban and rural status. For instance, urban may be solely defined by Baltimore City, while counties such as Anne Arundel, Baltimore, Howard, Montgomery and Prince George’s could be reassigned to a new suburban group.

Tables 1 through 5 show differences in practitioner utilization and expenditures for urban and rural populations. These analyses are based on the county of residence for the patient, not on the county where the service was performed. The significant percentage of payments allocated to undefined services in the private payers (especially in HMO-FFS) and Medicaid complicates any comparisons of payment by service category, especially across payers. Therefore, analyses of the data in Table 3 are restricted to within-payer comparisons of the urban and rural distributions. HCACC assumed that a particular payer’s exceptions/unclassified services represent a mix of service types that is similar, albeit unknown, for the payer’s urban and rural residents. Claims lacking information on patient location were excluded from all analyses, while those missing practitioner specialty were excluded if the specific analysis required that information. Because Medicare specialty coding is the most complete and accurate, the discussion of Tables 4 and 5 begins with this payer.

#### ***URBAN-RURAL DIFFERENCES IN PATIENT COVERAGE, SERVICE USE AND EXPENDITURES***

***The public payers cover larger shares of the practitioner payments for rural residents than they do of urban payments.*** Given the higher percentages of both low-income and elderly residents in rural areas (see Appendix, Table 1), this finding was expected. As shown in Table 1, Medicare patients comprise one-fourth of the rural patients in the Maryland Medical Care Data Base (MCDB) and less than one-fifth of the urban patients in the MCDB. Although found in far lower numbers, Medicaid enrollees are also more common among rural patients than urban patients: 12 percent versus 8 percent. As a result, Medicare and Medicaid cover 39 and 9 percent, respectively, of total rural practitioner payments, compared with 34 and 6 percent, respectively, of urban payments. Private insurance provides 52 percent of practitioner payments for rural residents and 61 percent for urban residents, the majority in both cases. A comparison of the patient and service distributions seems to indicate that Medicare patients use more services, on average, than the other insured populations, but that the elderly in rural areas probably use fewer services than their counterparts in urban areas. When the service and payment distributions are contrasted, it is apparent that regardless of geographic setting, the most expensive services are those supplied under HMO-FFS, followed by private, non-HMO and Medicare services, with Medicaid services the least expensive. (This finding was previously reported in *Practitioner Expenditures and Utilization: Experience from 1997*.)

***The greater likelihood of publicly insured enrollees among rural patients compared to urban recipients*** seen in Table 1 ***is mainly explained by higher proportions of rural patients in the public programs***, as illustrated in Table 2. Although rural residents account for just 7.3 percent of the state's population, rural patients constitute 10 percent of all Medicaid patients in the MCDB and more than 9 percent of the Medicare patients. Rural representation among the patients of private insurers is just 6 percent, implying smaller market shares for the private payers in rural jurisdictions than in urban areas.

**TABLE 1**  
**DISTRIBUTION OF PAYMENTS, SERVICES, AND PATIENTS IN THE 1997 MCDB**  
**BY URBAN-RURAL RESIDENT STATUS AND TYPE OF PAYER**

	Private Non-HMO Insurers	Private HMO FFS	Medicare	Medicaid	All Payers
<b>Payer Proportions Of Payments In MCDB</b>					
All Maryland Residents	40.7%	19.4%	34.0%	5.8%	100%
Urban Residents	41.2	19.5	33.7	5.6	100
Rural Residents	34.1	18.3	38.6	9.0	100
<b>Payer Proportions of Services in MCDB</b>					
All Maryland Residents	39.0%	13.3%	39.0%	8.5%	100%
Urban Residents	39.7	13.3	38.7	8.3	100
Rural Residents	31.2	13.3	42.9	12.5	100
<b>Payer Proportions of Patients in MCDB</b>					
All Maryland Residents	47.1%	26.6%	18.3%	8.0%	100%
Urban Residents	47.6	26.9	17.8	7.7	100
Rural Residents	40.2	23.3	24.9	11.6	100

The greater use of practitioner services by Medicare patients indicated in Table 1 is quantified in Table 2. ***Statewide, Medicare patients averaged 31.3 services per recipient during 1997, twice the utilization rate for Medicaid patients and nearly 2.6 times the annual utilization rate among private, non-HMO patients.*** Private HMO recipients averaged a low FFS utilization rate, 7.3 services per patient, but this does not reflect their true utilization rate because capitated services are not included in the service and payment tabulations. Whether the total practitioner utilization rate – including capitated and FFS services – for HMO patients in Maryland would be lower than that for private non-HMO patients is uncertain.

**TABLE 2**  
**PRACTITIONER UTILIZATION AND EXPENDITURES FOR URBAN AND RURAL PATIENTS**  
**IN MARYLAND, 1997**

	Percent of Patients	Percent of Payments	Percent of Services	No. of Services Per Patient	Mean Payment Per Service	Total Annual Payment Per Patient
<b>PRIVATE NON-HMO</b>						
State	100.0%	100.0%	100.0%	12.1	\$66	\$796
Urban	94.1	94.8	94.9	12.3	66	804
Rural	5.9	5.2	5.1	10.6	65	690
<b>PRIVATE HMO</b>						
State	100.0%	100.0%	100.0%	7.3	\$90	\$661
Urban	94.0	94.1	93.6	7.3	91	662
Rural	6.0	5.9	6.4	7.8	82	643
<b>MEDICARE</b>						
State	100.0%	100.0%	100.0%	31.3	\$54	\$1,689
Urban	90.6	93.0	93.0	32.1	54	1,732
Rural	9.4	7.0	7.0	23.5	54	1,267
<b>MEDICAID</b>						
State	100.0%	100.0%	100.0%	15.7	\$42	\$662
Urban	90.0	90.4	90.6	15.8	42	665
Rural	10.0	9.6	9.4	14.7	43	635
<b>ALL PAYERS</b>						
State	100.0%	100.0%	100.0%	14.7	\$62	\$907
Urban	93.1	93.8	93.6	14.7	62	913
Rural	6.9	6.2	6.4	13.7	60	818

The urban-rural difference in practitioner utilization by Medicare patients identified in Table 1 is quantified in Table 2, which shows that *a rural Medicare patient uses about 27 percent fewer practitioner services than does an urban Medicare recipient. Other patient populations also show lower service use by rural residents compared to their urban counterparts, ranging from 14 percent fewer services per patient among rural private, non-HMO patients to 7 percent lower use by rural Medicaid patients.* The lower service utilization by rural compared to urban patients does not support a hypothesis of lower health status (i.e., a higher frequency of chronic conditions) among Maryland's rural residents. Among HMO patients, however, use of FFS services appears to be about 7 percent higher among rural recipients, perhaps reflecting less frequent use of capitated reimbursement arrangements for rural patients compared to practitioner reimbursement for urban patients.

Table 2 also specifies the mean payment per service for each patient population. As stated previously, the most expensive practitioner services are those supplied under HMO-FFS, which have a statewide average payment per procedure of \$90, while the lowest mean, \$42, is associated with Medicaid. Private, non-HMO payers have a mean payment per practitioner service which is higher than Medicare's mean payment by about 21 percent. Comparing each payer's urban and rural mean payments, *no significant urban-rural payment differential exists within the private, non-HMO and Medicare populations. But for private HMO-FFS, the mean payment per service for urban residents was \$91, 10 percent above the \$82 mean payment per service for rural patients. Medicaid patients in rural counties have a mean payment for rural patients about 3 percent above the average payment for urban enrollees.*

A geographic difference in mean payment per service incorporates differences in the mix of services utilized and geographic differences in the reimbursement rates. Because the payment rate for

Medicaid is uniform across the state, the higher mean payment per service for Medicaid patients in rural counties implies that these enrollees use slightly more expensive services than do their urban counterparts. This use of more expensive services may reflect practitioner practice style, or might be a consequence of overall lower service utilization. Rural patients may tend to delay their use of practitioners so that they are somewhat sicker when they finally do obtain care. They would be more likely to use more complex and expensive services in this condition.

Medicare payment rates do vary somewhat in urban and rural areas of Maryland, with Medicare paying slightly lower rates in rural areas to reflect lower practice and malpractice costs. This would lead us to expect a slightly lower mean payment per service for rural Medicare enrollees. The nearly identical mean payments for urban and rural Medicare enrollees seems to indicate that rural enrollees use a slightly more complex, higher-priced mix of services. A supporting analysis (not shown here) found the mean Medicare payment over all procedures was \$126 rural versus \$119 urban and implies that rural Medicare enrollees use a relatively more complex mix of procedures. As described above, the use of more expensive services by rural Medicare enrollees may be a consequence of obtaining fewer services or may capture differences in practitioner practice style. The private payers are also likely to utilize lower payment rates in rural areas, which may in part explain the lower mean payment per service for HMO-FFS (see box at end of section). The similarity of the urban and rural mean payments for private, non-HMO patients may reflect either the absence of a significant urban-rural difference in reimbursement rates or – as with Medicaid and Medicare – a tendency for rural enrollees to use more complex and expensive services.

As seen in Table 2, total annual payment per patient was highest for Medicare beneficiaries at \$1,689 statewide, reflecting the high rate of service utilization among the elderly compared to the other payer populations. Although Medicaid recipients use more services, on average, than do private, non-HMO patients, the annual payment per private, non-HMO patient was higher because of the higher mean payment per service for the privately insured patients. In spite of the very high mean payment per FFS service for HMO enrollees, their low rate of FFS service utilization resulted in this group of patients having the smallest annual payment per patient at \$661.

***All of the payers had an annual payment per patient that was higher for urban enrollees compared to their rural counterparts, but the magnitude of the urban-rural difference varied by payer.*** The largest differential, 37 percent, was seen in the case of Medicare beneficiaries where total payments per patient were \$1,732 for urban beneficiaries and \$1,267 for their rural counterparts, resulting from the difference in number of services used. There was a 17 percent difference in the total payments per patient for urban non-HMO recipients compared to rural non-HMO recipients, reflecting both fewer services and a lower mean payment per service for rural residents. The urban-rural differentials for both HMO and Medicaid patients were under 5 percent and reflect one of the following phenomena: (1) the net effect of either fewer services but a higher mean payment for rural residents (Medicaid) or (2) more services but a lower mean payment (HMO-FFS).

***Considered together, these findings do not provide evidence of lower health status (e.g, a higher frequency of chronic conditions) among Maryland's insured rural residents.*** The lower service utilization seen among rural patients regardless of payer and the significantly lower per patient annual expenditures for rural patients do not provide evidence of a greater use of health care services among the state's rural insured population, relative to those living in more urban settings. To better understand how use of services varies within urban areas, we will separate residents of the more affluent suburban counties from the core urban area of which they are a part in a future analysis.

***URBAN-RURAL DIFFERENCES IN SERVICE MIX***

***Specific urban-rural differences in the distribution of practitioner service payments are similar for the public payers.*** Among Medicare and Medicaid patients, both evaluation and management services (E&M) and procedures account for higher proportions of practitioner payments in rural areas relative to urban areas, as shown in Table 3. Conversely, the payment percentages for imaging and tests are lower for publicly insured rural residents than for their urban counterparts. ***The urban-rural differences in payment proportions are mainly driven by differences in service mix.*** An urban-rural comparison of the service volume distributions (not shown here) replicates the urban-rural differences in the payment distributions except for imaging, which has a higher service percentage but a lower mean payment among rural Medicare patients than urban Medicare patients.

***Higher payment concentrations in E&M and procedures for rural publicly insured patients do not translate into higher per patient payments for these services in rural patients.*** Due to the higher average Medicaid payment for an urban patient, we would expect, on average, urban and rural Medicaid beneficiaries to have similar expenditures per patient for both E&M services (\$384 rural, \$383 urban) and procedures (\$128 rural, \$129 urban). For Medicare enrollees, the significantly higher average payment per urban patient results in rural residents having lower expected expenditures per patient for both E&M services (24 percent lower) and procedures (21 percent lower), relative to urban patients. The expected per patient payments for E&M services are \$549 for rural patients and \$722 for the urban population; per patient payments for procedures are expected to be \$454 for rural patients and \$578 for the urban population.

**TABLE 3**  
**DISTRIBUTION OF PRACTITIONER PAYMENTS BY URBAN/RURAL STATUS AND PAYER, 1997**

URBAN	PRIVATE PAYER FFS		Medicaid	Medicare	All Payers
	Non-HMO	HMO-FFS			
Evaluation and Management	33.5%	27.2%	57.6%	41.4%	35.9%
Procedures	33.4	34.3	19.3	32.7	32.5
Imaging	10.5	8.2	3.9	11.7	10.0
Tests	8.0	5.0	5.0	9.9	7.8
Other	2.6	2.4	0.1	4.2	2.9
Exceptions/Unclassified/Local/Not Coded	12.0	22.9	14.0	0.1	10.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
RURAL	PRIVATE PAYER FFS		Medicaid	Medicare	All Payers
	Non-HMO	HMO-FFS			
Evaluation and Management	31.4%	24.3%	60.4%	43.1%	36.9%
Procedures	33.1	34.5	20.1	35.2	32.9
Imaging	9.8	12.2	3.4	10.7	10.0
Tests	6.8	4.6	2.7	7.1	6.1
Other	1.8	2.0	0.3	3.7	2.3
Exceptions/Unclassified/Local/Not Coded	17.2	22.5	13.0	0.1	11.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Combining the percentages in Table 3 with the average payments per patient from Table 2 we find that ***lower use of imaging and testing services, as well as undefined services, accounts for the urban-rural difference in average payment per Medicaid patient.*** For Medicaid patients the expected per patient differences are: imaging, \$26 urban versus \$22 rural; testing, \$33 versus \$17, and other unclassified services, \$93 versus \$83. For Medicare, the expected payments per rural patient for imaging, testing, and other services range from 34 to 49 percent less than the expected payments per urban patient. These are proportionately greater reductions than the urban-rural percentage differences for E&M and procedures cited previously. The expected per Medicare patient differences for these services are: imaging, \$205 urban versus \$136 rural; testing, \$152 versus \$81, and other services, \$74 versus \$45.

***These findings seem to support a hypothesis of reduced access to specialized or unusual care and diagnostic procedures in rural areas.*** This could result from differences in the types of practitioners or services that are available and/or in the physician practice style compared to urban areas. Patients in rural areas would be expected to have less convenient access to specialty care physicians, certain types of non-physician health care professionals, and more sophisticated diagnostic procedures than do urban residents. In this situation, the rural mix of services should reflect relatively less access to specialized or unusual care and diagnostic procedures and proportionately more of the kinds of services provided by common primary and specialty care physicians, regardless of health status or age. The public payer payment percentages in Table 3 – combined with the information on average per patient expenditures – seem to reflect such reduced access, with a lower representation of imaging and tests, (and unclassified services in Medicaid and other services in Medicare) among rural compared to urban payments.

***Among private payers, HMO-FFS claims for residents in rural counties have a lower proportion of payments allocated to E&M services and a higher percentage of payments attributed to imaging.*** The HMO-FFS data represent a subset of HMO services which is ill-defined beyond the method of reimbursement, but seem likely to be somewhat skewed to less common services or infrequent providers. This phenomenon makes it difficult to interpret the underlying reasons for the urban-rural difference seen in Table 3, which shows rural counties with a lower percentage of payments allocated to E&M and a much higher percentage assigned to imaging compared to urban counties. The higher payment percentage for imaging in rural patients is driven by a higher volume, given that the mean payment for an imaging service is lower for rural compared to urban residents. The greater frequency of imaging in rural patients may reflect a greater use of FFS as the reimbursement mechanism for this service in rural areas compared to urban areas, where capitation of routine imaging services is more common. . The average payment per HMO-FFS patient is higher for urban residents; however, the HMO-FFS payment percentage for imaging in rural patients is very high, resulting in a higher expected imaging payment per rural HMO patient: \$78 rural versus \$54 urban. For all other services, the expected payments per patient are higher for urban HMO patients.

No clear urban-rural difference exists in the payment distribution for non-HMO patients. Comparison of the non-HMO urban and rural distributions seen in Table 3 is complicated by the high proportion of unknown/exception services received by patients in rural counties. Although some small differences in the urban-rural payment distributions exist for non-HMO private patients, these differences total to 5.1 percentage points, nearly the percentage difference in exception/unclassified services for the two groups. Because of the larger share of unclassified services for rural patients it is impossible to know if the urban and rural payment distributions truly differ.

## ***URBAN-RURAL DIFFERENCES IN SPECIALTY PAYMENTS AND UTILIZATION***

*Use of, and payment for, practitioner specialties by Medicare residents in urban and rural areas shows some variation, as depicted in Tables 4 and 5.* Primary care physicians provide 29 percent of Medicare practitioner services for rural residents compared to the 26 percent of all services that they provide for the urban population. However, primary care physicians do not receive a higher proportion of Medicare payments in rural counties. Primary care physicians account for 27 and 28 percent of the combined payments for E&M and procedures in rural and urban counties, respectively, as shown in Table 3. Supplemental information in Table 2 indicates that primary care physicians receive more reimbursement per urban Medicare patient than for a rural Medicare patient. Distributing the average services and payments from Table 2 across practitioner specialties reveals that primary care physicians account for an average of 8.5 services per urban Medicare patient and 6.8 services per rural patient. On average, primary care physicians are reimbursed \$364 per urban Medicare patient compared to \$265 per rural Medicare patient. There is significant urban-rural variation in the types of primary care physicians that provide Medicare services, with family practice physicians accounting for more than twice the percentages of services and payments for rural residents compared to urban patients. A similar pattern is found for general practice physicians. The shares of services and payments attributed to physicians in internal medicine, however, are about one-fifth less for patients in rural counties compared to urban areas.

Specialists account for similar proportions of Medicare services and payments in urban and rural areas; however, on average, they are reimbursed \$1,238 per urban Medicare patient compared to \$924 per rural Medicare patient. For urban enrollees, specialists provide an average of 20.9 services per patient; for rural patients specialists provide an average of 15.1 services. In rural areas, cardiologists and general surgeons are more significant providers, and pathologists are less significant providers compared to urban areas. Lower proportions of non-physician health care professional services and payments for rural residents balance the higher proportions of primary care physician services and payments for this population. However, both chiropractors and optometrists account for higher shares of the services and payments in rural as opposed to urban counties. Urban areas are associated with higher percentages of services and payments for physical therapists and podiatrists. On average, non-physician practitioners are reimbursed about \$118 per urban patient and \$75 per rural patient. In urban areas, non-physician practitioners provide an average of 2.4 services per patient; in rural areas, they provide an average of 1.46 services per patient.

The percentages of services and payments associated with primary care physicians are essentially the same in rural and urban areas for the privately insured non-HMO population. As shown in Tables 4 and 5, in the non-HMO population, primary care physicians account for proportions of rural services and payments that are nearly identical to their percentages for urban enrollees. It is important to note, however, that for non-HMO patients the proportion of services provided by physicians without an identified specialty is higher in rural areas. Since some of these providers are likely to be primary care physicians, the rural service and payment percentages reported in the Tables may underestimate the rural non-HMO allotment to these physicians. Supplemental information provided in Table 2 indicates that primary care physicians account for, on average, 3.7 services and \$171 of payments per non-HMO patient in urban areas compared to 3.2 services and \$150 per patient in rural areas.

Consistent with the pattern in Medicare, internal medicine physicians appear to be less significant, while family practice physicians are more significant practitioners for rural non-HMO patients. ***With regard to specialty care physicians, the percentages of services and payments are higher in the urban population.*** For this group of patients, specialists are reimbursed \$435 per urban patient compared to \$357 per rural patient. They provide an average of 4.9 services per urban patient and 3.9 services per rural patient. The large proportion of physicians with an unidentified specialty makes it difficult to draw definitive conclusions about the mix of specialty physicians used by the non-HMO population. The share of services provided by non-physician health care professionals is higher among the rural population, but the percentage of payments is about the same for both urban and rural areas.

***Primary care physicians account for smaller proportions of practitioner services and payments for the rural HMO-FFS population compared to their urban counterparts. This pattern is opposite that of the public payers.*** For this population, primary care physicians account for rural service and payment proportions that are 11 and 13 percent lower, respectively, than those for urban residents. This finding is consistent with the HMO-FFS payment distribution by service category shown in Table 3, where the share of payments allotted to E&M services was 11 percent lower for the rural HMO population. Primary care physicians are reimbursed \$79 per urban patient compared to \$67 per rural patient, providing an average of 1.9 services per urban patient and 1.8 services per rural patient. In spite of the reduced significance of primary care physicians for rural privately insured patients compared to urban enrollees, family practice physicians account for a higher share of services for rural HMO patients than for their urban counterparts (as they do among the publicly insured and

**TABLE 4**  
**DISTRIBUTION OF SERVICES AMONG PRACTITIONER SPECIALTIES**  
**FOR URBAN AND RURAL COUNTIES**

SPECIALTY  URBAN	PRIVATE PAYER FFS <sup>1</sup>				
	Non-HMO	HMO	Medicaid	Medicare	Total
<b>Primary Care Physicians</b>	<b>29.9%</b>	<b>25.4%</b>	<b>32.8%</b>	<b>26.4%</b>	<b>28.2%</b>
Family Practice	4.4	6.2	1.7	3.9	4.1
Freestanding Clinic - Not a Government Agency	5.4	0.0	0.0	0.0	2.0
General Medicine	1.0	1.8	12.1	0.9	2.1
Internal Medicine	12.2	7.6	7.7	21.3	15.2
Geriatrics	0.1	0.0	N/A	0.2	0.1
Osteopathy (includes manipulations)	0.0	0.0	0.0	0.0	0.0
Pediatrics	6.8	9.8	11.3	0.1	4.7
<b>Specialty Care Physicians</b>	<b>39.9</b>	<b>47.3</b>	<b>16.4</b>	<b>65.0</b>	<b>51.4</b>
Cardiology	3.1	4.2	0.1	7.8	4.9
General Surgery	1.1	2.5	0.9	1.4	1.4
OB/GYN	4.5	5.0	4.3	0.7	2.9
Orthopedics	2.4	3.4	0.4	2.3	2.3
Pathology	2.7	1.7	1.0	20.0	9.9
Radiology	5.8	5.3	4.3	8.7	6.9
All Other	26.0	25.1	5.4	24.0	23.2
<b>Physician Without a Specialty Identified</b>	<b>5.7</b>	<b>3.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.3</b>
<b>Non-Physician Health Care Professionals</b>	<b>15.4</b>	<b>12.3</b>	<b>3.9</b>	<b>7.5</b>	<b>10.6</b>
Acupuncturist	0.2	0.0	N/A	N/A	0.1
Audiologist/Speech Pathologist	0.1	0.1	0.0	0.1	0.1
Chiropractor	5.2	0.7	0.0	0.5	2.2
Clinical Social Worker	1.0	0.7	1.1	0.3	0.7
Dietician/Licensed Nutritionist	0.0	0.1	0.2	N/A	0.0
Home Health Provider	0.1	1.2	N/A	N/A	0.2
Nurse – Other Than Advanced Practice	0.1	0.1	N/A	0.2	0.1
Nurse Anesthetist	0.0	0.0	0.0	N/A	0.0
Nurse Midwife	0.0	0.0	0.4	0.0	0.0
Nurse Practitioner	0.0	0.0	0.3	0.0	0.0
Nurse Psychotherapist	0.3	0.0	0.0	N/A	0.1
Occupational Therapist	0.2	0.2	0.0	0.0	0.1
Optometrist	0.3	0.5	0.6	0.2	0.3
Other Specialty Not Listed Above	0.2	0.0	0.7	2.1	1.1
Physical Therapist	4.9	6.6	0.1	1.0	3.0
Podiatrist	2.1	1.4	0.3	2.6	2.1
Psychologist	0.7	0.5	0.1	0.3	0.5
<b>Other Providers</b>	<b>9.0</b>	<b>11.9</b>	<b>28.7</b>	<b>1.1</b>	<b>7.7</b>
Freestanding Medical Facility	0.1	1.4	11.5	N/A	1.3
Independent Laboratory	7.9	7.1	13.1	0.1	5.0
All Other	1.0	3.3	4.0	1.0	1.5
<b>Medicaid Mental Health, Specialty Unspecified</b>			<b>18.2</b>		<b>1.7</b>
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**TABLE 4 (continued)**  
**DISTRIBUTION OF SERVICES AMONG PRACTITIONER SPECIALTIES**  
**FOR URBAN AND RURAL COUNTIES**

<b>SPECIALTY</b>	<b>PRIVATE PAYER FFS <sup>1</sup></b>				
<b>RURAL</b>	<b>Non-HMO</b>	<b>HMO</b>	<b>Medicaid</b>	<b>Medicare</b>	<b>Total</b>
<b>Primary Care Providers</b>	<b>29.9%</b>	<b>22.6%</b>	<b>36.7</b>	<b>28.9%</b>	<b>29.4%</b>
Family Practice	7.2	7.2	3.6	9.4	7.7
Freestanding Clinic - Not a Government Agency	9.7	0.0	N/A	0.0	2.6
General Medicine	1.6	0.7	13.1	2.1	3.3
Internal Medicine	6.3	8.0	5.4	17.4	11.6
Geriatrics	0.1	0.0	0.0	0.0	0.0
Osteopathy (includes manipulations)	0.0	0.0	0.0	0.0	0.0
Pediatrics	4.9	6.7	14.6	0.0	4.2
<b>Specialists</b>	<b>37.2</b>	<b>58.1</b>	<b>19.8</b>	<b>64.2</b>	<b>51.9</b>
Cardiology	3.0	6.0	0.0	10.8	6.6
General Surgery	1.8	2.2	1.3	3.1	2.3
OB/GYN	3.4	5.7	7.4	0.6	2.9
Orthopedics	2.9	4.5	0.7	2.6	2.7
Pathology	3.1	3.8	0.6	12.2	7.1
Radiology	6.5	12.3	4.9	11.2	9.2
All Other	23.1	23.6	4.9	23.7	21.0
<b>Physician Without a Specialty Identified</b>	<b>6.5</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>
<b>Non-Physician Provider</b>	<b>16.1</b>	<b>10.8</b>	<b>4.0</b>	<b>6.2</b>	<b>9.2</b>
Acupuncturist	0.1	0.0	N/A	N/A	0.0
Audiologist/Speech Pathologist	0.1	0.2	0.0	0.1	0.1
Chiropractor	7.4	0.8	0.0	0.9	2.5
Clinical Social Worker	0.6	0.4	0.8	0.2	0.4
Dietician/Licensed Nutritionist	0.0	0.0	0.0	N/A	0.0
Home Health Provider	0.1	1.0	N/A	N/A	0.2
Nurse - Other Than Advanced Practice	0.0	0.0	N/A	0.2	0.1
Nurse Anesthetist	0.0	0.0	0.0	N/A	0.0
Nurse Midwife	0.0	0.0	0.7	0.0	0.1
Nurse Practitioner	0.0	0.2	0.5	0.2	0.2
Nurse Psychotherapist	0.1	0.0	0.0	N/A	0.0
Occupational Therapist	0.1	0.2	0.0	0.0	0.0
Optometrist	1.4	0.5	1.2	0.4	0.8
Other Specialty Not Listed Above	0.3	0.1	0.4	1.0	0.6
Physical Therapist	3.3	5.3	0.2	0.7	2.0
Podiatrist	1.7	1.3	0.1	2.2	1.7
Psychologist	0.9	0.7	0.1	0.3	0.5
<b>Other Providers</b>	<b>10.2</b>	<b>7.6</b>	<b>16.3</b>	<b>0.7</b>	<b>6.3</b>
Freestanding Medical Facility	0.1	0.9	8.7	N/A	1.3
Independent Laboratory	8.7	3.6	6.0	0.0	3.7
All Other	1.3	3.2	1.6	0.6	1.3
<b>Medicaid Mental Health, Specialty Unspecified</b>			<b>23.0</b>		<b>3.1</b>
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>1</sup>The following payers were excluded from this table because they were unable to provide specialty data: Aetna Mid-Atlantic, CIGNA Connecticut General, CIGNA Health Care Mid-Atlantic, Employers Health Ins. - Humana, Anthem Life and Health, Preferred Health Network, and John Alden. N/A indicates that the cell size would not produce statistically significant results.

**TABLE 5**  
**DISTRIBUTION OF PAYMENTS AMONG PRACTITIONER SPECIALTIES**  
**FOR URBAN AND RURAL COUNTIES**

SPECIALTY  URBAN	PRIVATE PAYER FFS <sup>1</sup>				
	Non-HMO	HMO	Medicaid	Medicare	Total
<b>Primary Care Providers</b>	<b>21.3%</b>	<b>11.9%</b>	<b>20.8%</b>	<b>21.0%</b>	<b>19.6%</b>
Family Practice	2.7	2.9	1.0	2.5	2.5
Freestanding Clinic - Not a Government Agency	4.5	0.0	N/A	0.0	1.7
General Medicine	1.0	1.1	8.8	0.7	1.4
Internal Medicine	8.5	4.1	4.4	17.5	11.1
Geriatrics	0.2	0.0	0.0	0.2	0.1
Osteopathy (includes manipulations)	0.0	0.0	0.0	0.0	0.0
Pediatrics	4.4	3.8	6.6	0.1	2.7
<b>Specialists</b>	<b>54.1</b>	<b>58.0</b>	<b>17.3</b>	<b>71.5</b>	<b>62.5</b>
Cardiology	3.4	4.2	0.0	8.9	5.5
General Surgery	2.8	4.1	1.1	4.4	3.5
OB/GYN	7.5	10.1	7.6	0.9	5.4
Orthopedics	3.5	4.3	0.5	4.5	3.8
Pathology	2.7	1.1	0.4	5.4	3.4
Radiology	6.6	4.2	2.5	9.5	7.1
All Other	36.4	30.0	5.1	37.8	33.8
<b>Physician Without a Specialty Identified</b>	<b>8.8</b>	<b>5.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.9</b>
<b>Non-Physician Provider</b>	<b>10.1</b>	<b>8.8</b>	<b>4.6</b>	<b>6.8</b>	<b>8.2</b>
Acupuncturist	0.1	0.0	N/A	N/A	0.1
Audiologist/Speech Pathologist	0.1	0.1	0.0	0.0	0.1
Chiropractor	1.9	0.2	0.0	0.2	0.9
Clinical Social Worker	1.0	0.5	1.1	0.3	0.6
Dietician/Licensed Nutritionist	0.0	0.1	0.2	N/A	0.0
Home Health Provider	0.4	4.4	N/A	N/A	0.9
Nurse - Other Than Advanced Practice	0.1	0.1	N/A	0.5	0.2
Nurse Anesthetist	0.1	0.0	0.0	N/A	0.0
Nurse Midwife	0.0	0.0	0.8	0.0	0.1
Nurse Practitioner	0.0	0.0	0.2	0.0	0.0
Nurse Psychotherapist	0.4	0.0	0.0	N/A	0.2
Occupational Therapist	0.1	0.1	0.0	0.0	0.1
Optometrist	0.3	0.2	0.1	0.2	0.2
Other Specialty Not Listed Above	0.5	0.1	1.8	2.6	1.3
Physical Therapist	2.3	1.7	0.0	0.4	1.3
Podiatrist	1.8	1.0	0.2	2.3	1.7
Psychologist	0.9	0.4	0.1	0.4	0.6
<b>Other Providers</b>	<b>5.7</b>	<b>16.0</b>	<b>30.6</b>	<b>0.7</b>	<b>7.1</b>
Freestanding Medical Facility	0.5	4.5	21.8	N/A	2.4
Independent Laboratory	2.5	0.6	3.8	0.2	1.4
All Other	2.7	10.9	4.9	0.5	3.4
<b>Medicaid Mental Health, Specialty Unspecified</b>	<b>0.0</b>	<b>0.0</b>	<b>26.8</b>	<b>0.0</b>	<b>1.8</b>
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**TABLE 5 (continued)**  
**DISTRIBUTION OF PAYMENTS AMONG PRACTITIONER SPECIALTIES**  
**FOR URBAN AND RURAL COUNTIES**

SPECIALTY  RURAL	PRIVATE PAYER FFS <sup>1</sup>				
	Non-HMO	HMO	Medicaid	Medicare	Total
<b>Primary Care Providers</b>	<b>21.7%</b>	<b>10.4%</b>	<b>22.4%</b>	<b>20.9%</b>	<b>19.3%</b>
Family Practice	4.1	2.7	1.9	5.7	4.3
Freestanding Clinic - Not a Government Agency	7.9	0.0	N/A	0.0	2.2
General Medicine	1.5	0.4	9.4	1.3	2.0
Internal Medicine	4.6	4.7	3.0	13.8	8.5
Geriatrics	0.2	0.0	0.0	0.0	0.1
Osteopathy (includes manipulations)	0.1	0.0	0.0	0.0	0.0
Pediatrics	3.3	2.6	8.1	0.0	2.2
<b>Specialists</b>	<b>51.8</b>	<b>64.8</b>	<b>19.4</b>	<b>72.9</b>	<b>62.7</b>
Cardiology	4.0	5.9	0.0	12.0	7.4
General Surgery	3.3	4.3	1.3	6.5	4.7
OB/GYN	6.8	10.4	10.2	0.7	5.2
Orthopedics	4.5	5.3	0.8	5.3	4.6
Pathology	3.0	1.7	0.2	3.8	2.8
Radiology	5.1	7.4	2.4	8.9	6.9
All Other	34.5	29.8	4.5	35.7	31.1
<b>Physician Without a Specialty Identified</b>	<b>9.5</b>	<b>2.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.4</b>
<b>Non-Physician Provider</b>	<b>10.0</b>	<b>8.6</b>	<b>3.7</b>	<b>5.9</b>	<b>7.3</b>
Acupuncturist	0.1	0.0	N/A	N/A	0.0
Audiologist/Speech Pathologist	0.1	0.1	0.0	0.0	0.1
Chiropractor	2.6	0.2	0.0	0.4	0.9
Clinical Social Worker	0.5	0.3	0.6	0.1	0.3
Dietician/Licensed Nutritionist	0.0	0.0	0.0	N/A	0.0
Home Health Provider	0.7	4.5	N/A	N/A	1.1
Nurse - Other Than Advanced Practice	0.0	0.0	N/A	0.5	0.2
Nurse Anesthetist	0.1	0.0	0.0	N/A	0.0
Nurse Midwife	0.0	0.0	1.0	N/A	0.1
Nurse Practitioner	0.0	0.2	0.2	0.1	0.1
Nurse Psychotherapist	0.2	0.0	0.0	N/A	0.0
Occupational Therapist	0.0	0.0	0.0	N/A	0.0
Optometrist	1.0	0.3	0.2	0.3	0.5
Other Specialty Not Listed Above	0.5	0.0	1.3	2.0	1.1
Physical Therapist	1.5	1.4	0.1	0.3	0.8
Podiatrist	1.5	0.8	0.1	1.7	1.3
Psychologist	1.2	0.6	0.1	0.4	0.6
<b>Other Providers</b>	<b>6.9</b>	<b>14.0</b>	<b>21.3</b>	<b>0.4</b>	<b>6.9</b>
Freestanding Medical Facility	0.5	3.2	16.7	N/A	2.4
Independent Laboratory	2.6	0.2	1.6	0.1	0.9
All Other	3.8	10.5	3.0	0.3	3.5
<b>Medicaid Mental Health, Specialty Unspecified</b>		<b>0.0</b>	<b>33.2</b>	<b>0.0</b>	<b>3.4</b>
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>1</sup>The following payers were excluded from this table because they were unable to provide specialty data: Aetna Mid-Atlantic, CIGNA Connecticut General, CIGNA Health Care Mid-Atlantic, Employers Health Ins. - Humana, Anthem Life and Health, Preferred Health Network, and John Alden. N/A indicates that the cell size would not produce statistically significant results.

private non-HMO patients). In contrast to the pattern seen in other payer populations, internal medicine physicians account for higher percentages of both services and payments for rural HMO-FFS recipients than for urban recipients.

Unlike primary care physicians, specialty care physicians account for higher proportions of practitioner services and payments for HMO-FFS rural residents than for their urban counterparts. This disparity is especially noticeable for radiologists and is consistent with the higher use of HMO FFS imaging services discussed earlier in the chapter. Overall, the share of services provided by specialists was 23 percent higher for the rural HMO population relative to their urban counterparts. This higher service proportion for specialists among rural residents is also reflected in the rural payment data, which shows a 12 percent higher share relative to urban residents. For HMO patients, specialists are reimbursed \$384 per urban patient compared to \$417 per rural patient. Each urban patient receives an average of 3.5 services, while each rural patient is provided with an average of 4.5 services. The greater use of specialists among the HMO-FFS rural population is surprising given that specialty care physicians are often in shorter supply in rural areas. Here it may reflect a greater use of FFS as the reimbursement mechanism for specialty care physicians compared to reimbursement for specialists in urban areas, which may make greater use of capitation. Non-physician health care professionals account for a lower proportion of HMO-FFS services and payments among rural residents, perhaps because of differences in practitioner availability in urban and rural areas.

***Primary care physicians account for larger proportions of practitioner services and payments for rural Medicaid enrollees, a pattern consistent with that seen in Medicare.*** The increased importance of primary care physicians in rural areas is greater for Medicaid enrollees, however. These physicians provide 12 percent more of total services and receive 8 percent more of total payments when they treat rural residents compared to urban enrollees. Primary care physicians provide 5.2 services per urban patient compared to 5.4 services per rural patient. In sum, primary care physicians receive an average of \$138 per urban patient and an average of \$142 per rural patient. The primary care specialties having a greater significance for rural enrollees as opposed to urban patients include pediatricians and family practice physicians, while physicians practicing internal medicine are more important in urban areas. Surprisingly, rural Medicaid patients receive a higher proportion of their services from physician specialists – especially obstetrician/gynecologists – than do their urban counterparts, and this pattern is also reflected in the distribution of payments. Each urban Medicaid patient receives an average of 2.6 services from specialists compared to an average of 2.9 services per rural patient. Specialists are reimbursed an average of \$115 per urban patient and \$123 per rural patient.

These increases in the rural percentages for physicians are balanced by very large decreases in the percentages of rural services and payments allotted to “other providers”, which includes independent laboratories and freestanding medical facilities such as county health departments. These providers’ shares of rural services and payments are 43 percent and 30 percent lower, respectively, as compared to urban services and payments. For urban patients, these providers account for 4.5 services per patient and receive an average reimbursement of \$203 per patient. In rural areas, these providers account for 2.4 services per patient and receive an average reimbursement of \$135 per patient. It seems likely that in rural areas physicians are providing some of the services usually provided by facility-based providers (employing physicians and other professionals) in urban areas. The reduced presence of facility-based providers in rural areas may also explain the higher proportion of both services and payments allotted to unspecified mental health providers in rural areas.

